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(54) **Base material equipped to be self-adhesive**

(57) Base material equipped to be self-adhesive on at least one side, which base material is partially coated with a self-adhesive compound and which exhibits an extension of more than 10% under a tensile load of 10 N/cm, so that after it has been applied, the base material can be loosened from the subsurface by means of pulling in the direction of the adhesion plane.

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## Description

[0001] The invention pertains to a base material equipped to be self-adhesive on at least one side, which base material is partially coated.

[0002] Base systems coated in an adhesive manner which detach with a pull on the base are known. As a rule, they are based on elastic systems which frequently represent laminates.

[0003] DE-OS 27 28 346 describes such a laminate which consists of an extensible foil and an adhesive compound based on A-B-A mass polymers. The totally adhesive laminate can easily be loosened from the subsurface by stretching.

The adhesive compound is always applied to the full surface. However, this manner of full-surface application is linked with a large number of disadvantages which limit its use, particularly in medical areas.

A full-surface manner of application leads to the fact that large amounts of the adhesive compound are required, which makes the production process expensive, and thus the end product expensive as well. Furthermore, it is essential that after it has been applied to the skin, the base material which has been coated with adhesive compound remains air and water-vapor permeable so that, for example, sweat can be transported away from the skin. A base which has been coated in a full-surface manner exhibits this property either not at all or only to a limited extent.

[0004] DE-OS 195 31 696 describes an adhesive foil laminate which is produced from an extensible base and an acrylic adhesive compound.

[0005] WO 95/06691 discloses a detachable adhesive tape which exhibits a foam as the base material.

[0006] WP 92/11333 describes a system which can be removed in a non-destructive manner, and which possesses a high resistance to tearing. However, once again, a partial coating is not described.

[0007] It is also known that self-adhesive compounds can be applied on base materials for residue-free, detachable sheet-like objects and/or medical uses not just in a full-surface manner, but also in the form of grid points, for example, by means of screen printing (DE-PS 42 37 252), whereby the adhesive points can also vary in size and/or be distributed in different ways (EP-PS 353 972), or by means of gravure printing of frames which are connected in the longitudinal and transverse directions (DE-PS 43 08 649). A loosening effect (stripping effect) elicited by the extension of the given base in the orientation of the base is not, however, described in the cited documents.

[0008] All of the previously described systems exhibit a serious disadvantage, since they are all full-surface coated. As a result, a comparatively large force is needed for detaching them, as a result of which the limit of strength of the base materials is reached.

[0009] Additionally disadvantageous for these base materials is the fact that with a full-surface coating, the systems that are used can lose their elasticity when the adhesive systems that are used exhibit a lower elasticity.

[0010] The adhesive compounds mentioned above can be available for processing in a base matrix. Currently available organic or inorganic solvents or dispersing agents are what is meant by a base matrix.

[0011] Systems without a base matrix are described as 100% systems, and are also not unknown. They are processed in the elastic or thermoplastic state. One currently available method of processing is melting. Such hot-melt adhesive compounds have already been

described in the state of the art. They are based on natural or synthetic caoutchoucs and/or other synthetic polymers.

Because of their high degree of hardness, adhesion to the skin is problematic for such 100% systems.

**[0012]** What is advantageous about the 100% systems is the fact that in terms of the process engineering, removal of the base matrix, i.e., the vehicle, is avoided, as a result of which processing productivity increases and while at the same time energy consumption and the use of machinery are reduced. In addition, any remaining behind of residues of the base matrix is reduced in this way as well. This in turn favors the lowering of the allergic potential in the case of a usage specifically for adhesion to the skin.

**[0013]** It is the task of the invention to avoid the disadvantages known from the state of the art and to make available a base material which is self-adhesive on at least one side and which, by means of extension, can easily be loosened from the skin with no pain after it has been applied, particularly in its use as a medical product.

**[0014]** This task is carried out by means of a base material which is equipped to be self-adhesive on at least one side, which is partially coated with an adhesive compound and which exhibits an extension of more than 10% under a tensile load of 10 N/cm, so that after it has been applied, the base material can be loosened from the subsurface by means of pulling in the direction of the adhesion plane.

**[0015]** Preferably, the base material exhibits an extension of more than 15% to 3000% under a tensile load of 10 N/cm, especially preferably 20% to 1000%.

**[0016]** It has proven to be advantageous that, for the use of water-vapor or air permeable base materials, with the products equipped to be self-adhesive the permeability was enormously high, even with applications of compound of more than 15g/m<sup>2</sup>.

**[0017]** Well-suited as base materials are extensible sheet-like objects made of synthetic and natural raw materials. Preferred are base materials which, following the application of the self-adhesive compound, can be used in such a way that they fulfill the properties of a functional dressing. By way of example, textiles such as woven fabrics, knit fabrics, formed fabrics, fleeces, laminates, nets, foils, foams, and papers can be mentioned, which exhibit an extensibility of at least 10% under a load of 10 N/cm.

Also suitable in addition to these are combinations of the materials mentioned.

**[0018]** Moreover, these materials can be pre-treated and post-treated. Currently available pre-treatments are corona[-discharge] and water-repellency treatments; common post-treatments are calendering, after-baking, backing, pressing and condensing, UV/IR exposure or electron exposure.

**[0019]** Thermoplastic hot-melt adhesive compounds based on natural and synthetic caoutchoucs and other synthetic polymers such as acrylates, methacrylates, polyurethanes, polyolefines, polyvinyl derivatives, polyester or silicone, with suitable additives such as adhesive resins, softeners, stabilizers and other process materials to the extent required, can advantageously be used as the self-adhesive compounds for the coating.

**[0020]** Their softening point should preferably be higher than 50°C, since as a rule the application temperature is at least 90°C, preferably between 120°C and 150°C or 180°C and 220°C in the case of silicones. If necessary, a post-crosslinking can be provided by means of UV or electron-beam exposure.

**[0021]** In particular, hot-melt adhesive compounds based on block copolymers are distinguished by their multiplicity of variation possibilities, since by means of the purposeful reduction of the glass transition temperature of the self-adhesive compound as a result of the selection of the tackifiers, the softeners and the size of the polymer molecules and the molecular

distribution of the components used, the required functional adhesion is assured, in particular, with the skin, even at critical locations in the human movement apparatus.

**[0022]** The high shear strength of the hot-melt adhesive compound is achieved through the high cohesiveness of the polymers. The good contact adhesiveness results from the range of tackifiers and softeners used.

**[0023]** Preferably, the hot-melt adhesive compound is based on block copolymers, in particular, A-B, A-B-A block copolymers or their mixtures. The hard phase A is primarily polystyrene or its derivatives, and the soft phase B contains ethylene, propylene, butene, butadiene, isoprene or their mixtures, especially preferred in this regard are ethylene and butene or their mixtures.

**[0024]** However, polystyrene blocks can also be contained in the soft phase B, specifically, up to 20 weight-%. The total styrene portion should, however, always be lower than 35 weight-%. Styrene portions between 5% and 30% are preferred, since a lower styrene proportion makes the adhesive compound smoother.

**[0025]** In particular, the purposeful mixing of di-block and tri-block copolymers is advantageous, whereby a portion of di-block copolymers of less than 80 weight-% is preferred.

**[0026]** In an advantageous version, the hot-melt adhesive compound exhibits the composition given below:

10 weight-% to 90 weight-%	Block copolymers,
5 weight-% to 80 weight-%	Tackifiers such as oils, waxes, resins and/or their mixtures, preferably mixtures of resins and oils,
If necessary, less than 50 weight-%	Softeners,
Less than 15 weight-%	Additives,
Less than 5 weight-%	Stabilizers.

**[0027]** Preferably, the aliphatic or aromatic oils, waxes and resins used as tackifiers are hydrocarbon oils, waxes and resins, whereby the oils, such as paraffin hydrocarbon oils, or the waxes, such as paraffin hydrocarbon waxes, have a favorable effect on skin adhesion as a result of their consistency. Medium- or long-chain fatty acids and/or their esters are used as softeners. These additives are used in this regard to adjust the adhesive properties and the stability. If necessary, additional stabilizers and other process materials are used.

**[0028]** It is possible to fill the adhesive compound with mineral fillers, fibers, hollow microspheres or solid microspheres.

**[0029]** The hot-melt self-adhesive compound exhibits a softening point above 70°C, preferably 95°C to 120°C.

**[0030]** Preferably, the hot-melt self-adhesive compounds are adjusted in such a way that at a frequency of 0.1 rad/s, they exhibit a dynamic-complex glass transition temperature of less than 5°C, preferably from -3°C to -30°C, and especially preferably from -9°C to -25°C.

**[0031]** High demands are made with regard to the adhesion properties, particularly with regard to medical products. For ideal use, the hot-melt adhesive compound should possess high contact adhesiveness. Adhesive force adapted to the function should be present against the skin and against the back of the base. In addition, high shear strength of the hot-melt adhesive compound is needed so there is no slipping.

Through the purposeful lowering of the glass transition temperature of the self-adhesive compound as a result of the selection of the tackifiers, softeners and the size of the polymer molecules and the molecular distribution of the components used, which is essential to the invention, the required functional adhesion with the skin and the back of the base is achieved. The high shear strength of the self-adhesive compound being used here is achieved through the

high cohesiveness of the block copolymers. The good contact adhesiveness results from the range of tackifiers and softeners being used.

**[0032]** The product properties such as contact adhesiveness, glass transition temperature and shear stability can be well quantified with the help of a dynamic-mechanical frequency measurement. Used in this regard is a transverse strain controlled rheometer.

The results of this method of measurement provide information regarding the physical properties of a material by taking the elasticoviscous portion into account. When this is done, the hot-melt self-adhesive compound is oscillated between two plane-parallel plates at variable frequencies and little deformation (linear elasticoviscous range) at a predetermined temperature. By means of a recording controller, the quotient ( $Q = \tan \delta$ ) of the loss modulus ( $G''$  viscous portion) and the storage modulus ( $G'$  elastic portion) is determined in a computer-aided fashion.

$$Q = \tan \delta = G''/G'$$

**[0033]** A high frequency is selected for the subjective sensing of the contact adhesiveness (tack), along with a low frequency for the shear strength.

**[0034]** A high numerical value represents better contact adhesiveness and worse shear stability.

**[0035]** The glass transition temperature is the temperature at which the amorphous or partially crystalline polymers make the transition from the liquid or rubber-elastic state into the glassy state, or vice-versa (Römpf Chemie-Lexikon [Encyclopedia of Chemistry], 9th Edition, Vol. 2, p. 1587, Georg Thieme Verlag Stuttgart – New York, 1990). It corresponds to the maximum of the temperature function at a predetermined frequency.

A relatively low glass transition temperature is necessary for medical purposes in particular.

Designation	$T_G$ low frequency	Smoothness low frequency/RT	Contact adhesiveness high frequency/RT
Hot-melt adhesive compound A	$-12 \pm 2^\circ\text{C}$	$\tan \delta = 0.08 \pm 0.03$	$\tan \delta = 0.84 \pm 0.03$
Hot-melt adhesive compound B	$-9 \pm 2^\circ\text{C}$	$\tan \delta = 0.32 \pm 0.03$	$\tan \delta = 1.70 \pm 0.03$

**[0036]** In accordance with the invention, preferred are hot-melt adhesive compounds in which the ratio of the viscous portion to the elastic portion at a frequency of 100 rad/s at  $25^\circ\text{C}$  is greater than 0.7, preferably 1.0 to 5.0, or hot-melt self-adhesive compounds in which the ratio of the viscous portion to the elastic portion at a frequency of 0.1 rad/s at  $25^\circ\text{C}$  is less than 0.4, preferably between 0.35 and 0.02, and especially preferably between 0.3 and 0.1.

**[0037]** Moreover, it is advantageous particularly with regard to use for medical products if the hot-melt adhesive compound is partially applied to the base material, for example, by means of matrix printing, thermoscreen printing, thermoflex printing or gravure printing, since base materials equipped to be adhesive over the full surface can easily cause mechanical skin irritation when applied

The partial application makes it possible to let the transepidermal water loss out through regulated channels, and improves evaporation from the skin when sweating, particularly with the use of air and water-vapor permeable base materials. In this way, skin irritations caused by blockages of the bodily fluids are avoided. The outlet channels that are provided allow this carrying away even when a multilayer dressing is used.

In addition, in the case of base materials with high areal weight and little extension, such as are common for quick-release bandages, the partial coating is what allows the removal through

extension only, which is quite painless in spite of the high adhesive force of this adhesive bandage system.

**[0038]** Preferred is the application in the form of polygeometric domes, and especially preferred, in the form of domes such that the ratio of diameter to height is less than 5:1. In addition, the printing of other forms and patterns onto the base material is also possible, for example, a printing image in the form of alphanumeric character combinations or patterns such as grids, strips or additionally, cumulates of the domes and zigzag lines.

Furthermore, it can also be sprayed on, for example, which results in a more or less irregular application pattern.

**[0039]** The self-adhesive compound can be distributed uniformly over the base material, however it can also be applied over the area in varying thicknesses or densities according to the function of the product.

**[0040]** The principle of thermoscreen printing consists in the use of a rotating, heated, seamless, drum-shaped perforated round template, which is coated with the preferred hot-melt self-adhesive compound by means of a nozzle. A specially shaped nozzle lip (round or square doctor blade) presses the hot-melt adhesive compound, which is fed in via the one channel, through the perforation of the template wall onto the web of base material which is being directed past. The latter is directed, by means of a counter-pressure roller, against the outer shell of the heated screen drum at a speed which corresponds to the circumferential speed of the rotating screen drum.

**[0041]** In conjunction with that, the formation of the small adhesive domes takes place in accordance with the following mechanism:

**[0042]** The nozzle doctor blade pressure conveys the hot-melt adhesive compound through the screen perforation onto the base material. The size of the domes formed is determined by the diameter of the screen hole. The screen is lifted from the base in accordance with the transport speed of the web of base material (speed of rotation of the screen drum). Because of the great adhesion of the self-adhesive compound and the internal cohesion of the hot melt, the limited supply of hot-melt adhesive compound in the holes is drawn with contour acuity by the dome base, which is already adhering to the base, and is conveyed onto the base by means of the doctor blade pressure.

Following the conclusion of this transport and depending on the rheology of the hot-melt adhesive compound, the more or less curved surface of the dome forms over the predetermined base area. The ratio of the height to the base of the dome depends on the ratio of the hole diameter to the wall thickness of the screen drum, and on the physical properties (flow behavior, surface tension and wetting angle of contact on the base material) of the self-adhesive compound.

**[0043]** In the case of the screen template in thermoscreen printing, the web/hole ratio can be less than 3:1, preferably less than or equal to 1:1, and in particular, equal to 1:3.

**[0044]** The described formation mechanism for the domes preferably requires base materials which are absorbent or which can at least be wetted by hot-melt adhesive compounds. Non-wettable base surfaces must be pretreated by means of chemical or physical methods. This can be done through additional measures, for example, corona discharge or coating with materials which improve the wetting.

**[0045]** With the described printing method, the size and shape of the domes can be determined in a defined way. The adhesive force values relevant for the use, which determine the quality of the products being produced, lie within very close tolerances for coating that is correct for the given purpose. The base diameter of the domes can be selected from 10  $\mu\text{m}$  to 5000  $\mu\text{m}$ , the height of the domes from 20  $\mu\text{m}$  to about 2000  $\mu\text{m}$ , preferably 50  $\mu\text{m}$  to 1000  $\mu\text{m}$ , whereby

the range of smaller diameters is intended for smooth bases, the range with larger diameters and greater dome heights for rough or highly porous base materials.

The positioning of the domes on the base is specified in a defined manner by the geometry of the application installation, for example, the engraving or screen geometry, which can be varied within wide limits. With the aid of the parameters which have been pointed out, the desired property profile of the coating, matched to the various base materials and uses, can be set with great precision by means of adjustable values.

**[0046]** Preferably, the base material is coated at a speed of more than 2m/min, preferably 20 to 220 m/min, whereby the coating temperature should be selected to be greater than the softening temperature.

**[0047]** The hot-melt adhesive compound can be applied to the base material at an areal weight of more than 15 g/m<sup>2</sup>, preferably between 20 g/m<sup>2</sup> and 300 g/m<sup>2</sup>, and especially preferably between 90 g/m<sup>2</sup> and 150 g/m<sup>2</sup>.

**[0048]** The percentage proportion of the surface coated with the hot-melt adhesive compound should be at least 20%, and can range up to approximately 95%, preferably 40% to 60% for special products, as well as 70% to 95%. If necessary, this can be achieved through multiple applications, whereby, if necessary, hot-melt adhesive compounds with differing properties can also be used.

**[0049]** In addition, it has proven to be advantageous to charge the adhesive with gas, as a result of which an improvement in the adhesive properties takes place. Thus, for example, an improved conformance and an increase in the initial adhesive force can result. Preferred is a charging of the hot-melt self-adhesive compound with a gas portion of more than 5 volume-%, preferably of 20 volume-% to 85 volume-%.

**[0050]** On the one hand, the combination of the hot-melt adhesive compound and the partial coating ensures secure adhesion of the medical product to the skin, while on the other hand, at least visually detectable allergic or mechanical skin irritations are excluded, even with use which extends over several days.

The epilation of corresponding regions of the body and the compound transfer to the skin are negligible because the adhesive does not anchor to skin and hair, rather, at up to 12 N/cm (range of samples), the anchoring of the self-adhesive compound to the base material is good for medical purposes.

**[0051]** As a result of the formed-in, predetermined breaking points in the coating, skin layers are no longer shifted with or against each other during removal. This non-shifting of the skin layers and the low degree of epilation lead to a level of painlessness previously unknown in systems that adhere so strongly. The base material which has been applied shows good proprioceptive effects.

**[0052]** Depending on the base material and its temperature sensitivity, the hot-melt adhesive compound can be applied directly, or it can first be applied to an auxiliary base and then transferred to the final base. A subsequent calendering of the coated product and/or a pretreatment of the base, such as corona discharge, for improved anchoring of the adhesive layer can also be advantageous.

**[0053]** The base material which has been coated with the adhesive compound can exhibit an air permeability of greater than 1 cm<sup>3</sup>/(cm<sup>2</sup>+s), preferably greater than 15 cm<sup>3</sup>/(cm<sup>2</sup>+s), especially preferably greater than 70 cm<sup>3</sup>/(cm<sup>2</sup>+s), and in addition a water-vapor permeability of greater than 500 g/(m<sup>2</sup>+24h), preferably greater than 1000 g/(m<sup>2</sup>+24h), especially preferably greater than 2000 g/(m<sup>2</sup>+24h).

**[0054]** Finally, after the coating operation the base material can be covered with an adhesive-rejecting base material such as siliconized paper, or it can be provided with a surgical dressing or padding.

**[0055]** It is especially advantageous that the base material which has been equipped to be self-adhesive can be sterilized, preferably  $\gamma$  (gamma) sterilized. Thus, especially well-suited for subsequent sterilization are hot-melt adhesive compounds on a block copolymer basis which contain no double bonds. This holds particularly true for styrene-butene-ethylene-styrene block copolymers or styrene-butene-styrene block copolymers. In this regard, no changes in the adhesive properties occur that are of any significance in terms of the use.

**[0056]** Finally, the self-adhesive compound can contain an active ingredient. In the case of the doped self-adhesive compounds, those which release materials are preferred.

**[0057]** The base material in accordance with the invention exhibits an adhesive force on the back of the base of at least 0.5 N/cm, in particular, an adhesive force between 1 N/cm and 5 N/cm. Higher adhesive forces can be achieved in different subsurfaces.

**[0058]** The outstanding properties of the base material which is equipped to be self-adhesive in accordance with the invention suggests its use for medical products, in particular sticking plasters, medical fastening means, surgical dressings, orthopedic or phlebological dressings and bandages.

**[0059]** In the following, the base material which is equipped to be self-adhesive in accordance with the invention is to be presented by means of examples, there being no intent to unnecessarily limit the invention.

#### **Example 1:**

**[0060]** In accordance with the invention, an elastic, self-adhesive bandage was produced, which can be used as a functional dressing because of its properties which are described below, whereby the functional dressing technology is oriented towards anatomy and biomechanics. The bandage used for this type of dressing consists of an elastic cotton fabric with a maximum tensile force of more than 80 N/cm and a maximum tensile force extension of more than 100%. The extensibility at 10 N/cm of the uncoated base material was 75%, and was not significantly reduced by the coating.

**[0061]** The self-adhesive compound was applied to the base by means of thermoscreen printing, which involved a hot-melt adhesive compound.

This hot-melt adhesive compound was made up of the following:

- an A-B/A-B-A block copolymer which consisted of hard and soft segments, with a ratio of A-B-A to A-B of 2:1 and a styrene content of 13 mol-% in the polymer; the self-adhesive compound portion was 40 weight-% (Kraton G)
- a paraffin hydrocarbon resin with a 52 weight-% portion of the adhesive compound
- hydrocarbon resin with a 7.5 weight-% portion (Super Resin HC 140)
- an anti-aging agent with less than a 0.5 weight-% portion (Irganox).

**[0062]** The components that were used were homogenized in a thermomixer at 175°C. The softening point of this self-adhesive compound was 95°C (DIN 52011), and the adhesive compound showed a viscosity of 2100 mPas at 150°C (DIN 53018, Brookfield DV II, Sp. 21). According to the method indicated above, the glass transition was -8°C.

The direct coating was carried out at 50 m/min at a temperature of 130°C. The base material was coated in a punctiform manner, whereby a 14 mesh screen template with a screen thickness of 300  $\mu$ m was used.

**[0063]** The bandage produced according to this method showed good loosenability through extension in the orientation of the surface of the skin, along with good air and water-vapor permeability. Because of the high shear stability of the melt adhesive, adequate



stabilization and a good proprioceptive effect were found. No skin irritation and a negligible amount of epilation were observed following the removal of the dressing.

**[0064]** A comparison study on steel showed that the shear force needed to loosen the bandage was only about one-third of the shear force that a full-surface coated bandage material exhibits with the same compound application.

### **Example 2:**

**[0065]** A filter material was produced which can be removed by means of extension and which is based on an elastic fleece. The filtering effect of this material was obtained through partial coating.

The filter material consisted of a commercially available filter fleece material with thermoplastic properties. The fleece had a maximum tensile force extension of 250% and an extension of 150% at a load of 10 N/cm.

**[0066]** The block copolymer was a styrene-ethylene-butene-styrene block copolymer which had been mixed with paraffin hydrocarbon wax. The ratio was one part polymer to one part paraffin hydrocarbon. Added to this mixture was 10% polystyrene resin (Amoco 18240). The adhesive contained one percent Irganox, an anti-aging agent (8-(3,5 di-t butyl-4-hydroxyphenyl)-propanoic acid-n-octadecylester)), and additional hydrocarbon resins and fatty acid esters, which were contained in only slight quantities in the total adhesive. The softening point of this self-adhesive compound was 100°C (DIN 52011) and the glass transition temperature was -6°C as determined according to the method mentioned above.

**[0067]** A compound application of 20g/m<sup>2</sup> was achieved with a 40 mesh screen template with a transmission of 20%.

**[0068]** The filter material produced in this way exhibited high air permeability, specifically, more than 85 cm<sup>3</sup>/(cm<sup>2</sup>+s). The elastic adhesive filter device proved to be advantageous, particularly with frequently changing use locations, because of its quick removability. Because of the partial coating over the entire side, quick and simple installation of these filter materials resulted as well. The shear force was 6 N/cm.

### **Patent Claims**

1. Base material equipped to be self-adhesive on at least one side, which base material is partially coated with a self-adhesive compound and which exhibits an extension of more than 10% under a tensile load of 10 N/cm, so that after it has been applied, the base material can be loosened from the subsurface by means of pulling in the direction of the adhesion plane.
2. Base material in accordance with Claim 1, characterized in that the base material exhibits an extension of more than 15% to 3000% under a tensile load of 10 N/cm, especially preferably 20% to 1000%.
3. Base material in accordance with Claim 1 or 2, characterized in that the self-adhesive compound is a hot-melt adhesive compound which at a frequency of 0.1 rad/s exhibits a dynamic-complex glass transition temperature of less than 5°C, preferably from -3°C to -30°C, and especially preferably from -9°C to -25°C.
4. Base material in accordance with one of the Claims 1 through 3, characterized in that the hot-melt adhesive compound is built upon a block copolymer basis, in particular, A-B or

A-B-A block copolymers or their mixtures, whereby phase A is primarily polystyrene or its derivatives, and phase B is ethylene, propylene, butene, butadiene, isoprene or their mixtures, especially preferred in this regard are ethylene and butene or their mixtures.

5. Base material in accordance with one or more of the preceding Claims, characterized in that the hot-melt adhesive compound consists of
  - 10 weight-% to 90 weight-% block copolymers,
  - 5 weight-% to 80 weight-% tackifiers such as oils, waxes, resins and/or their mixtures, preferably mixtures of resins and oils,
  - if necessary, less than 60 weight-% softeners,
  - less than 15 weight-% additives,
  - less than 5 weight-% stabilizers.
6. Base material in accordance with one or more of the preceding Claims, characterized in that the hot-melt adhesive compound is applied by means of matrix printing, thermoscreen printing or gravure printing.
7. Base material in accordance with one or more of the preceding Claims, characterized in that the hot-melt adhesive compound is applied to the base material in the form of polygeometric domes.
8. Base material in accordance with one or more of the preceding Claims, characterized in that the hot-melt adhesive compound is coated on to the base material at an areal weight of more than 15 g/m<sup>2</sup>, preferably between 20 g/m<sup>2</sup> and 300 g/m<sup>2</sup>, and especially preferably between 90 g/m<sup>2</sup> and 160 g/m<sup>2</sup>.
9. Base material in accordance with one or more of the preceding Claims, characterized in that the coated base material exhibits an air permeability of greater than 1 cm<sup>3</sup>/(cm<sup>2</sup>+s), preferably greater than 15 cm<sup>3</sup>/(cm<sup>2</sup>+s), especially preferably greater than 70 cm<sup>3</sup>/(cm<sup>2</sup>+s), and/or a water-vapor permeability of greater than 500 g/(m<sup>2</sup>+24h), preferably greater than 1000 g/(m<sup>2</sup>+24h), especially preferably greater than 2000 g/(m<sup>2</sup>+24h).
10. Base material in accordance with one or more of the preceding Claims, characterized in that the hot-melt adhesive compound exhibits an adhesive force on the back of the base of at least 0.5 N/cm, in particular, an adhesive force between 1 N/cm and 5 N/cm.
11. Base material in accordance with one or more of the preceding Claims, characterized in that the hot-melt self-adhesive compound exhibits a gas portion of more than 5 volume-%, preferably of 20 volume-% to 85 volume-%.
12. Use of a base material in accordance with one or more of the preceding Claims for medical products, in particular, orthopedic or phlebological dressings and bandages.
13. Use in accordance with Claim 12, characterized in that the partially coated base material is covered or it is provided with a surgical dressing or padding after the application.
14. Use in accordance with Claim 13, characterized in that the partially coated base material can be sterilized, preferably  $\gamma$  (gamma) sterilized.

15. Use in accordance with Claim 12, characterized in that the self-adhesive compound contains an active ingredient.